

Notes 5/4 - %s at the Store

■ Sales Tax

	2 steps	1 step
Ex: Pay 6% tax on a \$150 item	$\begin{aligned} \text{Tax: } \underline{6\%} \\ .06(150) &= \$9 \\ \text{Total:} \\ 150 + 9 &= \$159 \end{aligned}$	$\begin{aligned} 100\% + 6\% &= \underline{106\%} \\ 1.06(150) &= \$159 \end{aligned}$
Ex: Pay 7.5% on \$2000	$\begin{aligned} \text{Tax } \underline{7.5\%} \\ .075(2000) &= \$150 \\ \text{Total} \\ 2000 + 150 &= \$2150 \end{aligned}$	$\begin{aligned} 100\% + 7.5\% \\ \underline{107.5} \\ 1.075(2000) &= \$2150 \end{aligned}$

■ Percent Sales

	2 steps	1 step
Ex: Save 30% on a \$60 pair of shoes	$\begin{aligned} .3(60) &= \$18 \text{ saved} \\ 60 - 18 &= \$42 \end{aligned}$	$\begin{aligned} 100\% - 30\% &= \underline{70\%} \\ .7(60) &= \$42 \end{aligned}$
Ex: Save 15% on \$350 lawn furniture	$\begin{aligned} .15(350) &= \$52.50 \text{ saved} \\ 350 - 52.50 \\ &= \$297.50 \end{aligned}$	$\begin{aligned} 100\% - 15\% &= 85\% \\ .85(350) &= \$297.50 \end{aligned}$

■ Working Backwards

Ex: An item costs \$16.10 after a 6% sales tax and 20% off coupon.

What was the original cost of the item?

C = original cost

$$100\% - 20\% \text{ sale} = 80\%$$

$$\begin{array}{l} \times 0.8 \\ \times 1.06 \end{array} \left| \begin{array}{l} \cdot 80C = \text{price after sale} \\ (1.06) = 16.10 \end{array} \right. \begin{array}{l} \uparrow \div 0.8 \text{ second} \\ \downarrow \div 1.06 = \text{first} \end{array}$$

→ Take off sales tax first $\div 1.06$

$$\cancel{16.10} \quad \frac{16.10}{1.06} = \$15.19$$

↓
Sale price

→ Then take off the 20% sale $\div 0.8$

$$\frac{15.19}{0.8} = \$18.99$$